

United States Department of the Interior  
Heritage Conservation and Recreation Service

# National Register of Historic Places Inventory—Nomination Form

See instructions in *How to Complete National Register Forms*  
Type all entries—complete applicable sections

## 1. Name

historic ☐ The Deal Test Site

and/or common

## 2. Location

street & number E Bounded by Deal Rd.; Whalepond Rd., Dow Ave. N/A not for publication

city, town O. Ocean Township N/A vicinity of congressional district third

state N. New Jersey code 34 county Monmouth code 025

## 3. Classification

<b>Category</b>	<b>O: Ownership</b>	<b>Status</b>	<b>Present Use</b>
<input type="checkbox"/> district	<input checked="" type="checkbox"/> public	<input checked="" type="checkbox"/> occupied	<input type="checkbox"/> agriculture
<input checked="" type="checkbox"/> building(s)	<input type="checkbox"/> private	<input type="checkbox"/> unoccupied	<input type="checkbox"/> commercial
<input type="checkbox"/> structure	<input type="checkbox"/> both	<input type="checkbox"/> work in progress	<input type="checkbox"/> educational
<input checked="" type="checkbox"/> site	<b>P: Public Acquisition</b>	<b>Accessible</b>	<input type="checkbox"/> entertainment
<input type="checkbox"/> object	<input type="checkbox"/> in process	<input checked="" type="checkbox"/> yes: restricted	<input type="checkbox"/> government
	<input type="checkbox"/> being considered	<input type="checkbox"/> yes: unrestricted	<input type="checkbox"/> industrial
	<u>N/A</u>	<input type="checkbox"/> no	<input type="checkbox"/> military
			<input checked="" type="checkbox"/> museum
			<input type="checkbox"/> park
			<input type="checkbox"/> private residence
			<input type="checkbox"/> religious
			<input type="checkbox"/> scientific
			<input type="checkbox"/> transportation
			<input type="checkbox"/> other:

## 4. Owner of Property

name O. Ocean Township

street & number M. Monmouth and Deal Road

city, town O. Oakhurst N/A vicinity of state New Jersey

## 5. Location of Legal Description

courthouse, registry of deeds, etc. Hall of Records

street & number Court Street

city, town Freehold state New Jersey

## 6. Representation in Existing Surveys

Cultural Resource Survey at the  
title Deal Test Site

has this property been determined eligible? ☐ yes ☒ no

date December, 1980 ☐ federal ☒ state ☐ county ☐ local

depository for survey records Office of Cultural and Environmental Services

city, town Trenton state New Jersey

## 7. Description

### Condition

☒ excellent  
☒ good  
☐ fair

☐ deteriorated  
☐ ruins  
☒ unexposed

### Check one

☒ unaltered  
☐ altered

### Check one

☒ original site  
☐ moved date \_\_\_\_\_

Describe the present and original (if known) physical appearance

### DESCRIPTION

The Deal Test Site is a 208.43 acre tract located two miles inland from Deal in Ocean Township, Monmouth County. The tract, which was acquired by Ocean Township from the U.S. Army Signal Corps in 1973, contains two significant components. Physical remains from a half century of experimentation in communications technology conducted by the Western Electric Company, Bell Labs, and the U.S. Army Signal Corps are extant on the site which also contains significant deposits of fossiliferous Tertiary marls.

Bisected by Poplar Brook which flows east to the Atlantic at Deal, the site is bounded by Deal Road on the south, Whalepond Road on the east, Dow Avenue on the north and private property on the west. Boundaries have been drawn to include all property in that area formerly owned by the Western Electric Company, Bell Labs, and the U.S. Army Signal Corps. The main communications structures at the site are located along Poplar Brook within a 1,243 x 657' (20+ acre) fenced compound. The deposits of fossiliferous Tertiary marls are found throughout the site but are concentrated along Poplar Brook.

Beyond the fenced compound the eastern half of the site area contains a successional meadow with areas of marsh, red maple and red gum along Poplar Brook. An extensive mixed deciduous woodland is found in the western portion of the site and contains red maple and red gum in abundance. The site is a refuge for many species of mammals and birds. Ocean Township maintains an exercise trail at the site. The trail, which borders the present site's road system, has exercise stations along its length. A sizable community mulch heap is located in the north central portion of the site.

### Standing Buildings and Above-Ground Remains

(Locations of major structures and remains are shown on Figure 13 from Richard Hunter's 1980 Cultural Resource Survey of the Deal Test Site).

The site contains significant physical integrity for the period from 1919 to 1953 but lacks such integrity for the post-1953 period. The site's core area within the 20 acre fenced compound remains relatively unchanged from its 1920's and 1930's period of usage and the relative openness of the rest of the property adds to this integrity of setting. Physical remains of the 1950's and 1960's satellite tracking experiments are negligible. There are no remaining structures which were specifically built for satellite tracking purposes although a number of concrete pads, tower foundations and traces of other facilities are distributed about the site.

## 8. Significance

Period	Areas of Significance—Check and justify below			
<input type="checkbox"/> prehistoric	<input type="checkbox"/> archeology-prehistoric	<input type="checkbox"/> community planning	<input type="checkbox"/> landscape architecture	<input checked="" type="checkbox"/> religion
<input type="checkbox"/> 1400-1499	<input type="checkbox"/> archeology-historic	<input type="checkbox"/> conservation	<input type="checkbox"/> law	<input checked="" type="checkbox"/> science
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> agriculture	<input type="checkbox"/> economics	<input type="checkbox"/> literature	<input type="checkbox"/> sculpture
<input type="checkbox"/> 1600-1699	<input type="checkbox"/> architecture	<input checked="" type="checkbox"/> education	<input type="checkbox"/> military	<input type="checkbox"/> social/
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> art	<input checked="" type="checkbox"/> engineering	<input type="checkbox"/> music	<input type="checkbox"/> humanitarian
<input type="checkbox"/> 1800-1899	<input type="checkbox"/> commerce	<input type="checkbox"/> exploration/settlement	<input type="checkbox"/> philosophy	<input type="checkbox"/> theater
<input checked="" type="checkbox"/> 1900-	<input checked="" type="checkbox"/> communications	<input checked="" type="checkbox"/> industry	<input type="checkbox"/> politics/government	<input type="checkbox"/> transportation
		<input checked="" type="checkbox"/> invention		<input checked="" type="checkbox"/> other (specify) paleontology

Specific dates

N/A

Builder/Architect

N/A

Statement of Significance (in one paragraph)

### SIGNIFICANCE

The Deal Test Site is of national significance for its half century of contributions to the field of communications technology. A series of important experiments in ship-to-shore radio telephony and short wave communication were carried out at the site between 1919-1953 by the Western Electric Company and Bell Labs. From 1953-1973 the facility, operated by the U.S. Army Signal Corps, played a useful role in radar and satellite tracking experimentation. Although the site's physical integrity for its 1920's and 1930's period of usage is greatest and its more recent communications structures have not been preserved, the complete series of communications activities at the 208.43 acre site is historically significant. In addition, the site is significant for the paleontological resources contained throughout the site.

### Communications Activities at the Deal Test Site

#### Ship-to-Shore Radio Telephony, 1920-1930:

In the fall of 1919, following preliminary experiments at nearby Cliffwood, the Western Electric Company began construction of a permanent transmitting station on the original 63.26 acre portion of the Deal Test Site. In the period 1920-1922, this station performed an important role in early experiments on the commercial feasibility of ship-to-shore radio communication.

By December, 1919, three 165' high steel-framed towers had been erected forming an equilateral triangle, 500' on a side, and by the spring of the following year, a temporary frame building housing an experimental transmitter had been installed within this triangle. During May, 1920, using the call number 2XJ, this system was used to carry out a series of transmission tests involving broadcasts of music and speech which were received at distances up to 1,000 miles (Nichols & Espenschied, 1923, 198-200; Findley, 1950,97).

The permanent transmitting station was built in 1921. Experimental work at Deal continued in 1920 and 1921 with multi-channel tests involving two ships at sea, the S.S. 'Gloucester' and the S.S. 'Ontario', a second operating shore station at Green Harbor, Massachusetts, a receiver station at Elberon, and a field experimental station at Cliffwood, New Jersey. Deal and Green Harbor were connected by wire circuits to New York and Boston respectively, and during the winter of 1920/21 ship-to-shore links were successfully connected with the transcontinental telephone line thereby providing communication between a vessel in the Atlantic and Catalina Island on the Pacific coast.

## 9. Major Bibliographical References

See Continuation Sheet

## 10. Geographical Data

Acreeage of nominated property 208.43

Quadrangle name Long Branch

Quadrangle scale 1:24,000

UMT References

A 1 8 5 8 3 0 2 0 4 4 5 6 9 4 0  
Zone Easting Northing

B 1 8 5 8 3 0 4 0 4 4 5 6 1 0 0  
Zone Easting Northing

C 1 8 5 8 2 3 2 0 4 4 5 5 9 8 0

D 1 8 5 8 2 3 6 0 4 4 5 6 5 0 0

E 1 8 5 8 2 0 4 0 4 4 5 6 3 4 0

F 1 8 5 8 1 9 8 0 4 4 5 6 5 7 0

G 1 8 5 8 2 2 4 0 4 4 5 7 0 8 0

H 1 8 5 8 2 7 0 0 4 4 5 7 0 6 0

Verbal boundary description and justification

See Continuation Sheet

List all states and counties for properties overlapping state or county boundaries

state N/A code county code

state code county code

## 11. Form Prepared By

Form prepared with information contained in  
Richard Hunter's 1980 Cultural Resource Survey  
of the Deal Test Site.

name/title Anita Impellizeri, National Register Assistant

organization New Jersey Office of Cultural  
and Environmental Services

date 4/16/81

street & number 109 West State Street

telephone (609) 292-2028

city or town Trenton

state New Jersey

## 12. State Historic Preservation Officer Certification

The evaluated significance of this property within the state is:

X national      state      local

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the Heritage Conservation and Recreation Service.

Deputy

State Historic Preservation Officer signature

title

date

For HCRS use only

I hereby certify that this property is included in the National Register.

\_\_\_\_\_  
Keeper of the National Register

\_\_\_\_\_  
Chief of Registration

\_\_\_\_\_  
date

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Deal Test Site

NJ

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DESCRIPTION

With the exception of the former permanent transmitting station (Building A), the former microwave and high power lab (Building B) and a building shop (Building C), all buildings at the site are either used for storage by Ocean Township or are vacant. Building A is currently used by a Boys Club, Building B houses a township building shop, and Building C most recently housed a CETA program. Most experimental apparatus and old transmitting equipment have long since been removed from all the site's communications structures.

Two ship-to-shore steel framed antennae (Towers 1 and 2), three short wave steel framed antennae (Towers 4-6), the former temporary transmitting station (Building D), the former permanent transmitting station (Building A), and the former microwave and high power lab (Building B), are enclosed in the site's 20 acre fenced compound. A building shop (Building C), two garages (Buildings G and H), and the site of a third ship-to-shore antennae (Tower 3) are also within the fenced compound. A short wave laboratory (Building E), a long wave laboratory (Building F), and the site of a field laboratory and storage buildings are found outside the fenced compound.

The earliest remaining structures on the site are ship-to-shore towers 1 and 2, and Building D, all erected over the winter of 1919/1920. A third ship-to-shore tower (#3) formerly existed but appears to have been taken down when short wave towers 4-6 were erected. The two remaining ship-to-shore towers are 165' high and steel-framed. They were used as radio antennae during the 1920's ship-to-shore experiments, both radiating and receiving radio waves.

The temporary transmitting station is now located on its third site. Presumably it was first built where Building A (the permanent transmitting station) stands. It was moved south of this location and Poplar Brook before the construction of Building A. Today the temporary transmitting station is situated 700' to 800' upstream from this second location. The one story gable roofed structure sits on a cinder block foundation. Five bays wide and two bays deep it measures 34' x 20'. A frame porch is attached to the structure.

Building A (the permanent transmitting station) and probably Building G, the associated two-car garage, were erected in 1920 and 1921. Both buildings have stuccoed exteriors and are constructed of hollow tile blocks. Building A is nine bays wide and three bays deep and measures 30' x 90' with two wings. Its red tile hipped roof has three louvered eyebrow dormers and one side interior chimney. The main (east) facade has a balconied frame entry porch.

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DESCRIPTION

Described by Nichols and Espenshield in 1923, the permanent transmitting station was thirty by ninety feet and two stories high. Its southern half contained a two story operating room. The other half of the building contained an office, shop, power room, living and dining room, kitchen, and six bedrooms.

The building shop (Building C), short wave laboratory (Building E), long wave laboratory (Building F), a garage (Building H), the east wing of the former microwave and high power lab (Building B), a field laboratory and storage building (which formerly stood in the far northwest corner of the site), and the short wave steel framed antennae (Towers 4-6) were all erected c. 1929 when the site was expanded and short wave experimentation was intensified. Building C and the east wing of the Building B may be the earliest of this group of structures and could even be contemporary with Building A, the permanent transmitting station.

Building C is a one story hipped roof stuccoed structure that measures 62' x 30' and 40' x 32'. Building E is a one story hipped copper roof frame structure constructed in two wings on cinderblock to measure 68' x 30' and 33' x 20'. Building F is a one story frame structure constructed on cinderblock to measure 34' x 20'. Building H is a one story stuccoed five car garage constructed on cinderblock to measure 51' x 31'.

The one story hipped roof stuccoed east wing of Building B differs stylistically from all other buildings on the site with its flat roof and relatively open interior. The one story wing measures 62' x 32' and 38' x 24' and is probably a later 1930's or 1940's addition. Towers 4-6 are 175' steel frame short wave antennae and are distinguished from the earlier ship-to-shore towers by the horizontal assemblies on their apices. They both radiated and received radio waves.

Paleontology

In 1823/1824, a Late Pleistocene/early Holocene mastodon was excavated from a peat bog on the south side of Poplar Brook at the Deal Test Site. Fossil vertebrate remains have also been recovered from the Tertiary marls along Poplar Brook within the site area.

Correspondence with Mr. Robert Purdy of the National Museum of Natural History, Smithsonian Institution concerning paleontological resources on the Deal Test Site yielded the following:

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DESCRIPTION

"After searching through my records of Monmouth County fossil localities, I did find a reference to fossil fish remains being found along Poplar Brook in the vicinity of the U.S. Military Reservation in Ocean Township and east to Monmouth Road. In the late 1800's marl was dug in this area and fossils were easy to find. Mansfield, 1923, New Jersey Geological Survey Bulletin 23, p. 99, reports: 'The old marl pits... are much overgrown, but on the north side of the creek the upper part of the Manasquan marl (probably the Shark River Formation) is exposed with the base of the Kirkwood.' Both of these formations yield fossil vertebrate remains; this exposure may be on the Ocean Township park property. If the exposure is still accessible, it may yield fossil shark teeth, fossil fish, reptile, bird, and mammal remains; any digging along Poplar Brook in the park area may produce more fossils, many of which may be important to science."

(Purdy, 1980, letter)

The existence of 19th century marl pits along Poplar Brook is confirmed by secondary historical sources and the Schenck Map of 1868 (Fig. 8). Deed research, the Schenck map of 1868 (Fig. 8), and field examination all indicate that the mastodon find probably occurred on the south side of Poplar Brook in the eastern sector of the Deal Test Site.

Paleontological field investigation concentrated on determining the locations of peat bogs and marl formations within the Deal Test Site property. No attempt was made to recover paleontological specimens from the peat or from the underlying Tertiary marls.

During discussions in the field, Mr. W.T. Bell, environmental consultant to the Township of Ocean and a co-author of the Poplar Brook Watershed Study Report (1975), indicated two possible peat bog locations. One lay on the north side of Poplar Brook immediately northeast of the present Boys Club; the other, an area of almost an acre, lay to the south of the brook and downstream of the Boys Club. Mr. Bell suggested these locations on the basis of characteristic vegetation (thickets of arrow wood and red gum) rather than on core samples.

Subsequent subsurface testing by the archeological field team verified Mr. Bell's hypothesis, and postholes 109-111, 113, 114, 121, 123 and 131, and 12, 14-16, confirmed the existence of the southerly and northerly bogs respectively (Fig. 13). Because of ground water close to the surface, no test units were dug.

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DESCRIPTION

No subsurface testing of marl pits was attempted but surface indications of at least one pit occur due north of the Boys Club.

Prehistoric Archeology

The site has demonstrated an absence of remains from the Archaic and Woodland Eras. In view of the discovery and recovery of a mastodon skeleton in 1824, there could be Paleoindian Era remains present.

Historic Archeology

It was not until the mid-1850's that a farmhouse was erected within the Deal Test Site. Today an avenue of substantial trees leads north from Deal Road to where this farm, the Herbert Farmstead, once stood.

A series of shovel tests and postholes (#s 501-516) were excavated on either side of the termination of the avenue but no in-situ remains were encountered. Details of these tests are given in Table 4. Although a fair quantity of late 19th and 20th century cultural material was recovered it would appear that the site has been extensively disturbed within recent years. It is known, for instance, that the ground station for the Courier satellite experiment was located in this vicinity.

Projected Land Use Plans/Evaluated Impact

Ocean Township has applied to the New Jersey Office of Green Acres for state matching funds to carry out a park development scheme at the Deal Test Site. Their application proposes construction of a recreation lake, library building, horticultural nursery and picnic, play and parking areas. The recreation lake will also serve as a retention pond and provide a measure of flood control for areas downstream.

The park development scheme includes preservation and/or adaptive reuse of the significant 20th century communications structures. Potential impact is therefore fairly slight. Construction of the library building will cause only minor visual impact on the core area as this structure is to be sited some 200' to 300' south of the Poplar Brook. Establishment of picnic areas, meadows, and ecologic and wildlife preserves will satisfactorily complement the original setting.

Construction of the parking areas to the north and south of Building A, the Boys Club, and construction of the proposed library building are likely to impact portions of the bog areas and to a lesser extent the underlying marls. Construction of the recreation lake and earth dyke will impact the Tertiary marls.

Areas of major impact, i.e. the recreation lake, library building, parking areas and nursery, are shown on Figure 13.

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SIGNIFICANCE

Later in 1921, tests were extended to include the General Electric Company and the Radio Corporation of America, and in January, 1922, the transatlantic steamer, the S.S. 'America' was equipped with transmitting and receiving apparatus. In February and March of 1922, simultaneous telephone-telegraph communication between Deal and the S.S. 'America' was demonstrated over distances of up to 300 miles (Nicols & Espenschied, 1923, 211-213, 232-238; Findley, 1950, 97).

At this point, after important technical advances, a post-war depression intervened and the steamship companies lost enthusiasm for ship-to-shore radio-telephone service. The Deal facilities were then put to other uses which included other experimental work in long wave and short wave communications. In 1929, work resumed on ship-to-shore telephony using some of the advances that had been made in the intervening period. The Deal Test Site was again prominent in these experiments, notably in those that involved the United States Lines' steamship 'Leviathan' (Heising, 1929/1930, 204-209). For a brief period after this, before the station at Ocean Gate, New Jersey, went into operation, Deal acted as a commercial ship-to-shore station for the Long Lines Department of AT & T (Findley, 1950, 99).

Other Radio Experiments, 1920-1953:

Experimentation with short wave radio communications at Deal appears to date from the mid-1920's when the world's first high-power amplifiers (20-80 kw) operating in the range 2,700 - 22,000 kHz were constructed at the site. From 1927 to 1929, the original 20 kw transmitter at Deal was used to give the first commercial short wave radio telephone links between the United States and England while the later 80 kw transmitter provided the model for major installations at Lawrenceville and Ocean Gate, New Jersey; Dixon, California; and Buenos Aires (Findley, 1950, 98-99; Bell Labs Record 1927/1928, 246-247; Fultz, 1928/1929, 489).

The success of these experiments appears to be connected with the land purchases of 1929 which increased the size of the Deal Test Site from 63.26 acres to its present 208.43 acres (Bell Telephone Quarterly, 1939, 96) and it is likely that the so-called short wave and long wave laboratories, and other field laboratories, were erected shortly afterwards (see Fig. 13, Buildings E and F). On the basis of architectural evidence and old photographs, Building C and the eastern portion of Building B may also have been built around this time.

Three new 175' high steel-framed towers, arranged in a line, appear to have been erected in the late 1920's or early 1930's to support short wave antennae. As a result, one of the three original ship-to-shore towers may have been dismantled as its location no doubt interfered with the three new towers.

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SIGNIFICANCE

During the 1930's and 1940's, the expanded facilities at Deal saw continued experimentation on short wave transmitters as well as work on ultra-short waves, microwaves and long waves. Antennae and transmitters for a 12 channel unattended system between Cape Charles and Norfolk were developed at Deal and experiments on 180 cm long distance radio transmission resulted in a forerunner of the radio relay stations which exist across the country today. A number of successful antennae arrays were developed for commercial use and important contributions were made to our knowledge of the reflective properties of the atmosphere.

During the Second World War, Deal was involved in radar research and developed several radar transmitters and antennae. The Cutler antenna feed, a standard component in airborne radars by the end of the war, was a particularly notable contribution (Findley, 1950, 99-103).

The post-World War II lay-out of the Deal facilities is indicated fairly clearly in a property map of 1948 (Bell Telephone Laboratories, 1948, NJ 148). This shows all the presently existing buildings along Poplar Brook enclosed within a 1,243' x 657' fenced compound (see Fig. 13). Locations of all six steel towers are given and it is clear that by this time the westernmost of the three original (1919) towers had been dismantled. Outside the compound, a field laboratory and storage building are shown in the far northwest corner of the property, the short wave Laboratory in the northeast (Fig. 13, Building E), and the long wave laboratory in the southeast (Fig. 13, Building F). In addition, a number of field telephones and electrical outlets are distributed across the site.

However, whereas the 1920's, 1930's and early 1940's appear to have been a period of fairly steady growth at Deal, after World War II the facilities became increasingly overshadowed by other laboratories, notably by those at nearby Holmdel. In January, 1953, Bell Labs finally sold the property and by October of that year had redistributed all personnel and equipment to other locations (Bell Labs Record, 1953, 463).

**The U.S. Army Signal Corps and the Deal Test Site:**

The Deal Test Site was leased by the U.S. Army Signal Corps at Fort Monmouth, New Jersey from 1953 through 1973, and participated in various satellite tracking operations throughout that period. Specific information on this period has been difficult to obtain and a wealth of unexamined classified material is likely to exist. The following outline has been gleaned chiefly from newspaper accounts and oral sources.

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SIGNIFICANCE

Prior to 1957, the Signal Corps must certainly have been carrying out experiments at Deal in connection with U.S. preparations for satellite launches as the facilities were in a position to monitor the launching of Russia's Sputniks I and II in October and November of that year (Zahl, 1960, 320-321; Fort Monmouth newspaper, October 5, 1967). Indeed, Deal is claimed as the first U.S. government installation to pick up and record signals from both of these satellites (Monmouth Message, October 5, 1972).

In the late 1950's and 1960's, Deal, as part of the Fort Monmouth Tracking network, apparently monitored and logged numerous American (e.g., Tiro I and II) and Russian satellites as well as all missiles launched from Cape Kennedy.

The site in conjunction with the Salinas, Puerto Rico, facilities played an important role in the Courier communication satellite experiment and the Deal ground station relayed the first photographs by facsimile to and from this early large capacity satellite. The major components of this ground station consisted of a tracking antenna which was used in conjunction with trailer-mounted radio transmitting equipment and message processing and control gear. The antenna comprised a 28' parabolic dish mounted on a 40' conical steel tower (Mottley et al, 1961; Monmouth Message, October 5, 1972; Fort Monmouth newspaper, October 5, 1967). It is apparent from a contemporary photograph and a 1963 utilities survey (Mottley et al, 1961; Fort Monmouth, map PF-K715, 1963) that this ground station was located immediately south of the site of the Herbert house and farm building (see Fig. 13).

A comparison of the 1948 property map and the 1963 utilities map gives some indication of the major areas of satellite tracking activity at Deal. Apart from the installation in the area of the Herbert farm, tracking equipment appears to have been located in the northwestern part of the site and in the areas immediately north and northeast of the original Bell Labs compound. The foci of activity, however, appear to have been Buildings B and C. Building B evidently housed a considerable quantity of satellite tracking equipment and included sound-proofed rooms. Building A, the former transmitting station, was an administrative office during the Signal Corps tenancy and the former short wave laboratory, Building E, apparently acted as a firehouse (Hannish, 1980, pers. comm.).

Other activities at Deal included acoustic experiments in connection with the solar eclipse of March, 1970, using four infrasonic microphones arranged at the corners of a 1,500' x 1,500' square (Monmouth Message, March 12, 1980). This square is defined on the 1963 utilities map by four octagonal concrete foundations with a fifth one at the center point. No further documentary evidence has been found to substantiate the claim (Hodnett, 1980) that the moon's surface was mapped at Deal to a resolution of less than 10'.

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SIGNIFICANCE

The U.S. Army Signal Corps vacated the property in 1973 and in the same year the Township of Ocean acquired the site.

Evaluation of Similar East Coast Communications Facilities

Green Harbor, Massachusetts, Deal's sister site in the 1922 ship-to-shore experiments, retains little of its original fabric. This facility is now fully automated and possesses no structures that are earlier than the 1930's (Merriam, 1980, pers. comm.).

The transmitting installations at Lawrenceville and New Brunswick, New Jersey and Molinas, California, which were roughly contemporary with Deal, now display little trace of their original appearance (Sivowitch, 1980, pers. comm.; Morris, 1980, pers. comm.). The same is also true of Bell Labs' Holmdel facilities in Monmouth County, New Jersey.

The Radio Central station at Rocky Point, New Jersey, is also in a state of partial survival. Forty-two acres of this site, however, including the main operating/administrative building which dates to 1921-1931, an auxiliary building and service road, were recently accepted onto the National Register of Historic Places (Kuwick, 1980, pers. comm.; National Register Inventory-Nomination form, 1980). This site is notable for the first successful transatlantic transmission of the human voice (Archer, 1939, 153). In comparison with all these sites, Deal has a higher proportion of surviving remains and as a result is fairly representative of a type of experimental radio facility now rarely seen on the landscape.

Physical remains of the 1950's and 1960's satellite tracking experiments are, by comparison, negligible. There are no surviving standing structures that were built specifically for satellite tracking purposes although a number of concrete pads and foundations still remain. The neighboring Project DIANA site, Marconi Road, Wall, New Jersey, another 1950's radar station with a similar dearth of physical evidence, was rejected by the National Register of Historic Places although included on the State Register (National Register Inventory - Nomination Form, 1976.)

Paleontological Resources

As significant resources have been found at the Deal Site, it is likely that further resources will be found. Good preservation of organic materials has been observed and the potential for radiocarbon dating, pollen analysis, and microscopic and macroscopic examination of these remains is high.

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BIBLIOGRAPHY

- Archer, Gleason L. Big Business and Radio. New York: The American Historical Company (1939).
- Banning, William P. Commerical Broadcasting Pioneer: The WEAJ Experiment, 1922-1926 Cambridge, MA: Harvard University Press (1946).
- Beers, S.N. and F.W. 'Map of Monmouth County.' New York: Smith, Gallup and Holt (1861).
- Beers, F.W. Atlas of Monmouth County. New York: Beers, Comstock and Cline (1873).
- Blackwell, O.B. 'Transatlantic Telephony: The Technical Problem.' Bell System Technical Journal, vol. 7, 168 ff (1928).
- Edelman, Marjories. An Historic Perspective of the Township of Ocean. Ocean Township (1974).
- Fagen, M.D. ed. A History of Engineering and Science in the Bell System. 2 vols. New York: The Laboratories (1975 and 1978).
- Fenton, Carroll L. and Mildred A. The Fossil Book. New York: Doubleday and Co., Inc. (1958).
- Findley, P.B. 'The Laboratories in Monmouth County'. Bell Laboratories Record, vol. 28, 97-103 (1950).
- Fultz, M.E. 'Transmitting Station at Lawrenceville, N.J.' Bell Laboratories Record, vol. 7, 489 ff (1928/1929).
- Hannish, Paul. Personal Comments; Deal, 1980.
- Heising, R.A. 'Telephony Between Ship and Shore.' Bell Laboratories Record. vol., 8, 204-209 (1929/1930).
- Hills, John. 'A Compleat Plan of Part of the Province of Pennsylvania East and West Jersey .' (1778).
- Hills, John. 'A Map of Monmouth County.' (1781).
- Hodnett, Raymond J. 'The Master Plan/Green Acres Application for the Deal Test Site Park Development.' (1980).
- Hunter, R.W., Cavallo, J.A., and Hebditch, R.F. Cultural Resource Survey of the Deal Test Site, Township of Ocean, Monmouth County, New Jersey (December, 1980).

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BIBLIOGRAPHY

Kuwick, Lenore. Personal comments; New York State Historic Preservation Office, 1980.

Lightfoot, Jesse. 'Map of Monmouth County.' Middletownpoint: J.B. Shields (1851).

Merriam, Bob. Personal comments; New England Wireless Museum, Rhode Island, 1980.

Mottley, T.P., Teetsel, W.P. and P.W. Siglin. 'Project Courier (U): Final Report.' Fort Monmouth, New Jersey: U.S. Army Signal Research and Development Laboratory (1961).

Nichols, H.W. and Lloyd Espenschied. 'Radio Extension of the Telephone System to Ships at Sea.' Proceedings of the Institute of Radio Engineers, vol. 11, 193-240 (1923).

Purdy, Robert W. Letter to J. Gell, Office of Cultural and Environmental Services, New Jersey Department of Environmental Protection, 7/23/1980.

Salter, Edwin. A History of Monmouth and Ocean Counties. Bayonne, New Jersey E. Gardner and Son (1890).

Schenck, John E. 'Map of Long Branch and Surroundings.' (1868).

Sivowitch, Elliot. Personal comments; Division of Electricity, Smithsonian Institution, Washington, D.C., 1980.

Stillwell, John E. Historical and Genealogical Miscellany. 5 vols. Baltimore, MD: Genealogical Publishing Co. (1970).

Township of Ocean Commemorative Book. (1949).

Township of Ocean Environmental Commission. Poplar Brook Watershed Study Report. Oakhurst, New Jersey (1975).

Van Rensselaer, Jeremiah. 'Notice of a Recent Discovery of the Fossil Remains of the Mastodon.' Annals of the Lyceum of Natural History of New York, vol. 1, 246-250 (1824).

Wolverton, Chester and Foresy, Breou. Wolverton's Atlas of Monmouth County. New York: Chester Wolverton (1889).

Zahl, Harold A. 'From an Early Sputnik Diary.' Institute of Radio Engineers Transactions on Military Electronics, vol. MIL-4, 320-322 (1960).

Newspaper and archival references given in full in text.

**United States Department of the Interior  
Heritage Conservation and Recreation Service**

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GEOGRAPHICAL DATA

Block 33-1, Lot 1 - Ocean Township Tax Map

In September, 1919, the Western Electric Company of New York purchased 63.26 acres of the former Herbert farm from the Jersey Shore Realty Company of Asbury Park (Monmouth County Archives, deed 1097/292). In 1925, this tract and an additional 1.08 acre lot passed to Bell Labs who expanded their holdings in 1929 with two further acquisitions of adjacent land (Monmouth County Archives, deeds, 1295/322, 1502/80, 1506/21). Bell labs remained on the site until October, 1953, when they sold a total of 208.43 acres to Fangmann and Scott of Jersey City (Monmouth County Archives, deed 2412/569). From 1953 to 1973, the property was leased by the U.S. Army Signal Corps of Fort Monmouth until in the latter year Walter Scott sold the land to the Township of Ocean (Monmouth County Archives, deed 3862/742; Monmouth Message, October 5, 1972, 2).

The success of the communications experiments at the Deal Test Site appears to be connected with the land purchases of 1929 which increased the size of the Deal Tst Site from 63.26 acres to its present 208.43 acre tract. Communications experiments were conducted throughout this 208.43 acre tract. Because the complete series of communications activities at the site has historic significance, the entire 208.43 tract has been nominated. In addition, Tertiary marls underlie the entire tract. The probable paleontologic resources within the Tertiary marls are further justification for nominating the entire 208.43 acre tract.



The Deal Test Site  
Ocean Township, Monmouth County  
New Jersey

U.T.M.  
Long Branch, New Jersey

- A 18 583020 4456940
- B 18 583040 4456100
- C 18 582320 4455980
- D 18 582360 4456500
- E 18 582040 4456340
- F 18 581980 4456570
- G 18 582240 4457080
- H 18 582700 4457060

ROAD CLASSIFICATION

- Heavy-duty —————
- Medium-duty —————
- Light-duty —————
- Unimproved dirt ————
- U. S. Route (Shield symbol)
- State Route (Circle symbol)

LONG BRANCH, N.

N4015- W7358/7.5x9.5

1954  
PHOTOREVISED 1970  
AMS 6164 I SE-SERIES V82

AL 20 FEET  
SEA LEVEL  
ET-DATUM IS MEAN LOW WATER  
XIMATE LINE OF MEAN HIGH WATER  
FEET ALONG THE OCEAN,  
FT IN SHREWSBURY RIVER  
AL MAP ACCURACY STANDARDS  
RVEY, WASHINGTON, D. C. 20242  
AND SYMBOLS IS AVAILABLE ON REQUEST